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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,719

02/05/2004

Daniel R. Bell III

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09/18/2006

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EXAMINER

MCNALLY, DANIEL

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/772,719

Applicant(s)

BELL ET AL.

Examiner

Daniel McNally

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on February 5, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/5/04 11/15/02
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kourtides et al. [US-5296288] in view of Sawko [NPL] and Kitagawa et al. [US-2003/0152769].

Kourtides et al. discloses surface insulation comprising of insulation material 14, ceramic fabric 13 and protective coating 12 (column 11, lines 23-35). Figure 3 shows the ceramic fabric affixed to the insulation or "felt" and a protective coating, comprising ceramic material (column 3, line 67- column 4, line 7), applied to the ceramic fabric. Kourtides does not disclose the insulation having an outer mold line (OML) and inner mold line (IML) surfaces. Kourtides also does not disclose the insulation as polybenzazole (PBZ) fibers needled into a felt layer.

Sawko discloses a surface insulation comprising a batting or insulation having an OML and IML as shown in Figure 1 (page 52). Note, Sawko discloses an OML fabric located on the OML surface. It would have been obvious to one of ordinary skill in the art at the time of invention to identify the surfaces of Kourtides insulation as OML and IML in light of the teachings of Sawko.

Kitagawa discloses a method of producing a heat-resistant felt by needle punching PBZ into a felt (paragraph 0086). Note Kitagawa suggests an application of the felt as rocket insulation (paragraph 0089). The insulation of Kitagawa has a low water absorbency. It would have been obvious to one of ordinary skill in the art at the time of invention to use PBZ material, that is needled into a felt, as the insulation of Kourtides as taught by Kitagawa in order to produce a surface insulation with a low water absorbency.

With regard to claim 3, Sawko discloses the OML fabric as attached to the batting or "felt layer" by OML thread. One of ordinary skill in the art would know that threading, stitching or needling would cause the fibers of the fabric and batting to entangle.

With regard to claim 5, Kourtides discloses applying the protective coating to the flexible ceramic fabric, which is affixed to the insulation as an outer cover (column 9, lines 35-50).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kourtides et al. in view of Sawko and Kitagawa et al. as applied to claims 1,3 and 5 above, and further in view of Dotts et al. [US-4151800].

Kourtides, as modified, discloses a method of fabricating surface insulation as discussed above. Kourtides, as modified, discloses an IML fabric or "felt," stitched or "needled," to the IML surface of the insulation. Kourtides does not disclose needling poly(1,3-phenylene isophthalamide) into a felt. Dotts et al. discloses needling Nomex or "poly(1,3-phenylene isophthalamide)" fibers into a high temperature resistant felt (column

3, lines 61-65). Note Dotts uses the Nomex felt as a layer of insulating felt. Kourtides discloses the insulation layer as a composite insulation (column 1, lines 23-26). A composite insulation contains at least two different materials. Both PBZ and Nomex are known to be insulative materials and it would be obvious to one of ordinary skill in the art at the time of invention to combine PBZ and Nomex to make a composite insulation, and to needle the Nomex into a felt as taught by Dotts in order to stitch or "needle" the Nomex fibers to the IML surface without the fibers falling apart.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kourtides et al. in view of Sawko and Kitagawa et al. as applied to claims 1,3 and 5 above, and further in view of Heim [US-4255817].

Kourtides, as modified, discloses a method of fabricating surface insulation as discussed above. Kourtides does not disclose applying the ceramic coating to the ceramic fabric prior to affixing the fabric to the insulation. Heim discloses a method of making a composite insulation material comprising the steps of applying a coating to a basic fabric or "ceramic fabric" followed by sewing or "affixing" the coated fabric to the lower portion of the garment or "first felt layer" (column 3, lines 18-37). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the process of Kourtides by applying the coating before affixing the fabric to the felt as taught by Heim in order to enable entangling of fibers from felt and fabric with the protective coating.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abe et al. [US-2006/0046049] discloses a method of making a polybenzazole felt, capable of withstanding high temperatures, by needle punching.


Smith et al. [US-5766745] discloses a method of preparing an insulation comprising a needling step of multiple layers to fix the layers together.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel McNally whose telephone number is (571) 272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

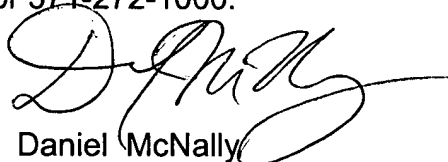
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300



Daniel McNally  
Examiner  
Art Unit 1733

dpm  
September 13, 2006